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Bath's Ironwork: Wartime Removal and its Subsequent Restoration

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Abstract

In 1942, three years into World War II, the Ministry of Supply ordered that all cast and wrought iron in the city of Bath be removed for war purposes. This included the railings around garden squares, which were generally thought elitist and old-fashioned anyway. Ironwork could be retained on grounds of architectural or historic merit but reprieval was rare, and much fine ironwork that disappeared, mainly gates and railings, was first recorded by Official War Artists. Since the 1970s much of Bath's missing ironwork has been restored and the rest has undergone campaigns of repair, notably at Queen Square, Royal Crescent, Lansdown Crescent and Royal Victoria Park. An ongoing project to reinstate overthrows and lighting on the Bathwick estate coordinates best conservation practice, bringing together several materials and technologies of the 1790s.

Keywords: ironwork, gates, railings, Bath, wartime, restoration.

Introduction

A patriotic headline in the *Bath Chronicle and Weekly Gazette* on 12 September 1942, 'Turn your Gate into Rifles' explained that a garden gate weighing one hundredweight [50kg] makes 50 rifles and two hundredweight [100kg] of iron from a typical small villa is worth 10 Bren guns. Domestic and municipal architectural ironwork was identified nationally and requisitioned as the quickest source of raw material as it was easily located and required minimal labour to remove, and in cities it was nearly always next to railways for transportation. It also provided the

government with a very visible means of maintaining the morale-boosting war effort. To back the cause yet balance artistic loss, the *Architectural Review* published a pictorial rationale of 'non-essential' and 'essential' London railings, making 'The Case for Removal', distinguishing those that result from the Victorian 'municipal habit' of indiscriminate displays of civic pomp and wealth and serve no useful purpose, and those of quality and scale that relate to an architectural whole.[1]

But the architectural ironwork removal gave rise to anger and mixed feelings as the scrap was stockpiled in depots and railway sidings. Hoarded material gave rise to suspicions that it was surplus or even unusable and that the government wanted to conceal that the sacrifice of the country's architectural ironwork was in vain. In reality, unwanted delays in using these reserves were likely due to shortages of transport and labour, and recycled metal has always been a key component of the steel industry. The process used in the conversion of iron into steel depends on the product required. The metal alloy that forms brittle cast iron has a relatively high carbon content, and the ductility and toughness of wrought iron results from an even lower carbon content than mild steel. (The composition of Bath's railings varies greatly across the city, as historically the wrought iron was graded using a crown system with three crowns being the best). When recycling iron to make steel, the carbon content is carefully controlled, though less so for simple military applications like vehicles, ships' hulls and bombs. For special applications - stainless steel for tanks, gunmetal for guns - the carbon content is critical, and small amounts of other elements are added including manganese, nickel, silicon and chromium to control strength and wear resistance.[2]

Demand for scrap metal remained high throughout the war and also afterwards.[3] The iron and steel industry had for long been dependent on imports from the United States and elsewhere, and the demand for steel production in World War II continued to be fed partially from abroad, though shipments especially of American scrap declined sharply as the war progressed. This was due to a combination of the United States' own domestic demand and the wartime need to save cargo space and overseas expenditure from importation. Meanwhile, by 1943 armaments consumed 85 per cent of Britain's steel output.

Ironwork Removal in Bath

In 1942 as the tempo of war increased three years into the conflict, the Ministry of Supply ordered that on or after 23 September all ironwork in the city of Bath - gates, railings, bollards and chains – shall be removed for war purposes, to be recycled for the manufacture of weapons. Its citizens were by then more than ready to do everything they could to support the war effort, and the fervent removal of so-called 'surplus' ironwork was a much needed morale booster. The city had been attacked on 25-26 April, part of the so-called Baedeker offensive following the allied bombing of the historic German city of Lübeck. The bombing had left 400 people dead, 329 houses and shops totally destroyed, a further 732 were demolished and the city engineer recorded 19,147 buildings as receiving some damage.[4]

As soon as war on Germany was declared in September 1939 a strict night-time blackout was imposed in Bath. Householders were encouraged to paint the tops of railings white to help pedestrians navigate the darkened streets, and to keep their

basement area gates locked to prevent people falling down the steps when grasping onto them as a guide.[5] Twelve months later in a piece titled 'Bath's Useless Railings' the press announced that the Ministry of Supply required an immediate survey to be completed in six weeks of all surplus ironwork in Bath prior to its requisitioning for scrap.[6] But with war underway in 1940 it needed no government persuasion for the governors of the Bath Royal National Hospital for Rheumatic Diseases to remove their 'massive' railings in Upper Borough Walls, helping it was said to improve the appearance of the building, making a tidier street and a brighter, smarter hospital.[7]

Well before the war the signs already were that the legacy of eighteenth- and nineteenth-century ironworkers was broadly unloved, and anathema to the Modern Movement and contemporary town planning. Patrick Abercrombie, later co-author of the County of London Plan (1943) for post-war reconstruction and modernisation, in his book of 1933, *Town and Country Planning*[8] valued the interpenetration of green spaces with the 'urban mass', and the 'open spaces of the town must therefore be…wholly accessible to the public'.[9] In 1937 the *Bath Weekly Chronicle and Herald* reported Lady Oxford[10] as having implored the authorities to remove the railings in London's squares, pointing out that 'they protect nothing since there is nothing in particular to protect. Our experience in Bath is that by the demolition of railings great improvement has been effected, and of this the Orange Grove is a conspicuous instance.[11] The charm of that central flower-bedded lawn has been much increased since its unrailing, a modernisation which might with equal advantage be extended to other enclosures in the city.'[12]

In the early years the Government acted quickly in stirring patriotic fervour to help the war effort. In September 1940 the touring Railings Exhibition, organised by the Ministry of Supply's Iron and Steel Control Department and opened by Sir Giles Gilbert Scott, arrived in Bath before returning to London.[13] 12 screens of striking enlarged photographs echoed Lady Oxford's voice, illustrating the advantages of removing railings and converting the ugly and useless into steel to help beat the Nazis. This was balanced by examples that should be retained where ironwork was an intrinsic part of the architectural design. Notably, the wrought-iron lighting overthrows to the whole of Bath's Lansdown Crescent were singled out for retention (Figure 1).[14] Nearby Cheltenham held its own Railings Exhibition at the Art Gallery with a central exhibit of mangled metal from a German aircraft 'destroyed by converted railings'.[15]

The main cull of Bath's ironwork was in parks and squares - Queen Square, St James's Square and Catherine Place. Most domestic ironwork was salvaged from the Victorian and Edwardian suburbs, Oldfield Park, Bathwick and Combe Down where low stone boundary walls had half-height railings and gates.[16] By May 1943 the Demolition and Recovery Office of the Ministry of Works and Planning in Bristol reported that the removal of Bath's railings would be complete in a fortnight and that over 1,387 tons were already collected with only 50 tons remaining.

Meanwhile, the Regency spa town of Cheltenham, architecturally comparable to Bath, contributed a massive 10,000 tons of salvage from 1940-45, worth £34,497.[17] 'A squad of 30 men' removed its 'unsightly' railings - 'a disfigurement to the town' - from communal spaces including St James's, St Luke's and Suffolk Squares, the

Winter Garden and the parish churchyard as well as private garden frontages.[18] Cheltenham's very elegant balconies were retained, as were examples of earlier Late Georgian railings, for example on London Road.[19]

Questions of legality and compensation

The power to requisition ironwork had already been provided nationally under Regulations 50 and 53 of the Defence (General) Regulations, 1939, which authorised the removal of anything from land, and this included railings. Under English law the general principle is that railings attached to a property are part of its freehold, but when severed become chattels, and Regulation 53 authorised the removal of any chattel in the United Kingdom. But public enthusiasm for the compulsory removal of railings and gates was far from universal, with indignant owners feeling that their rights were infringed and they questioned the legality of the process, and 'the great railings controversy'[20] and the 'battle of the railings'[21] raged, from newspaper columnists and irate vicars to town councils.

Many questioned the extent and legality of these governmental powers, together with the liability for damage caused by the removal – which was considerable – and the compensation to be paid by the government.[22] The Compensation (Defence) Act, 1939 provided for compensation to the reasonable market value of the railings at the time of requisitioning, and there was no specification whatever that this was limited to their 'scrap' value. However, a change to the regulations, effective from 30 April 1940, introduced a standard price of 25 shillings a ton, regardless whether the railings were of little value or, as they could be,

of very considerable value.[23] In practice, owners were expected to make a gift of their railings as a patriotic gesture, and few claimed the compensation anyway, as the average weight of iron collected per house in Bath was two hundredweight, or one tenth of a ton – worth just five pounds in today's money.[24] Another major source of scrap nationally was tram rails, for which the government paid inclusive compensation at a higher rate of £8 per ton because of the cost to local authorities of removal and making good damage to roads. This nonetheless substantially outweighed the compensation, and Bath spent £2,500 removing tram rails against receiving just £220 in compensation.[25]

For individuals, damage to walls and stone plinths was also eligible for compensation under section 3 of the Compensation (Defence) Act, though authorities mostly found it cheaper to repair the damage. Two further distinct problems were raised by The National Federation of Property owners in a memorandum to the Chancellor of the Exchequer. One was the provision of temporary wartime substitutes or 'first-aid repairs' - usually chain link fencing - for lost ironwork, and the other was eventual post-war replacement, both of which it argued should be carried out by local authorities but paid for under the War Damage Act, 1941 rather than the Compensation Act.[26]

Safety and artistic exemption

The local authority had the power to exempt ironwork on safety grounds, principally around basement areas because of the danger of unprotected drops - which applied to

most Georgian houses in central Bath - and along raised walkways, one of the features of Bath's streets, at George Street, the Vineyards, Lansdown Road and Julian Road.

Ironwork could also be reprieved on grounds of special artistic or historic merit, but for this an owner had to appeal to a Government panel chaired by architects across the country appointed by the Ministry of Works. Bath's architect was Mowbray Aston Green (1865-1945), author in 1904 of *The Eighteenth Century Architecture of Bath,* which established him as the authority on the city's architecture. Although the book addresses but fleetingly the legacy of ironwork, Green became its untiring advocate.[27] The local press kept the public informed, though a further article headed 'Bath Gates for Guns' added ominously that 'railings exempted under this heading are very few'.[28] Nonetheless, the Georgian Group in Bath and elsewhere, founded recently in 1937, zealously defended ironwork of good design.[29] Notably, this included the decorative wrought-iron balconettes that are a feature of Bath's Georgian townhouses, and the architect Henry Edmund Goodridge's bold Regency cast ironwork with displays of anthemia, rosettes and other Grecian decoration derived from L.N. Cottingham, *The Smith and Founder's Director*, 1824.[30] An artistic dividing line of 1850 was suggested for railings and architectural features corresponding roughly, it argued, to the change from craftsmanship to mass production, and *Country Life* supported the removal of what was argued to be artistically debased Victorian cast-iron railings that existed solely to demarcate private property.[31] The Victorian Society was founded only in 1958 though The Georgian Group did argue that some later ironwork deserved to be kept for its vigour and robustness of design.

Recording gates and railings: Bath's war artists

A vital pictorial record of the architectural ironwork of Bath was recorded in paintings and sketches by a group of Official War Artists, both before its removal and the mangled results of that which remained in the ravaged city after the bombing - as well as every other aspect of the war including the rescue and salvage operations and the burial of the dead.[32] These artists were employed under two schemes. The Ministry of Information revived a scheme which originated in the First World War and functioned under the War Artists Advisory Committee chaired by the National Gallery's young director, Kenneth Clark. This met 197 times between 23 November 1939 and the cessation of war in 1945.[33] The other was the Recording Britain programme, instigated by the Pilgrim Trust to document a vanishing British way of life. The official war artists were augmented by unofficial civilian artists who were issued with official sketching permits after vetting by the security service MI5, necessary to avoid being arrested as a spy. Prominent among the unofficial artists were the head of the Bath School of Art, Clifford Ellis (1907-85) and his wife Rosemary (1910-98), art mistress of Bath's Royal School, and great friends of the avant garde painter, John Piper (1903-92), who was sent to Bath as the official war artist. The Ellis's spoke movingly about the unnecessary removal of historic ironwork, especially in outlying districts where 'a very brief schedule of ironwork to be preserved' had been made, but largely ignored and 'no ironwork whatever was being left'. They managed to get 'early warning' about ironwork that was to be removed and in some cases persuaded the authorities to hold up the removal for a day or two until they quickly made record drawings (Figure 2).[34]

Ironwork Restoration

After the war it took several decades for the restoration of the ironwork to get under way. The post-war Georgian city was remote from the ideas of a brave new world that prevailed in the country until the early '70s; about 1000 Georgian houses were demolished in Bath between 1950 and 1973, one third of the eighteenth-century city. It became known as the *Sack of Bath*, after the book that brought the scandal to national attention and the tide began to turn.[35] 1975 was European Architectural Heritage Year and the same year Bath City Council published *Yesterday's Tomorrow*, a wish list of schemes including the repair of railings in front of Lansdown Crescent. Since then, much of Bath's missing ironwork has been restored and the rest has undergone – and is still undergoing – campaigns of repair.

Funding for the ironwork reinstatement came from various sources, notably the local authority's Bath Architectural Feature Grants, while the Bath Preservation Trust grant-aided communal garden railings. Recently the World Heritage Enhancement Fund has been involved in a few schemes. The fund is a joint venture between the World Heritage Site Steering Group, Bath and North East Somerset Council and Bath Preservation Trust and it works in partnership with other organisations, from community groups to national bodies like the National Trust.

The Garden Squares and Crescents

The restoration of railings around the city's garden squares, replacing temporary chain link fencing, took priority as one of the city's principal features. Railed city garden

squares were well established in Bath by the end of the eighteenth century. Originally, the squares were not the densely planted picturesque gardens with trees that they are today, and the railings just enclosed gravel walks intended for polite strolling and conversation. The largest and most important restoration project was Queen Square, the first in the great urban sequence of Queen Square, the Circus and Royal Crescent by the architect-developers, John Wood the Elder and Younger. Railings reinstatement at St James's Square and Catherine Place followed, and then programmes of restoration and repair at the Royal Crescent, Royal Victoria Park and Great Pulteney Street.

Queen Square and the Circus

The great innovation in English town planning of Queen Square, built 1728-36 by the elder John Wood, was that the north side was conceived like a single palace façade and the east and west sides were the palace 'wings'. Low stone balustrading enclosed the central garden (and also the front areas of the surrounding houses), with piers and urns flanking the entrances, and a great obelisk stood in a central basin of water. Iron railings replaced the stone balustrading in the 1770's though the aquatint of 1784 by Thomas Malton (1748-1804) shows the houses' area balustrading still extant (Figure 3).[36] Fixed to the railings were gates on each side and 12 lantern brackets and lanterns.[37] The Bath Preservation Trust initiated restoration in the late 1970's, proposing painted forged mild steel railings and piers on artificial stone plinths.[38] There was some debate as to whether the original stone balustrading should be reinstated; a section of the balustrading remains at nearby Lyncombe Hall[39] and rescued fragments were presented to the Bath Preservation Trust in 1972.[40]

The Circus, the second in Wood's urban sequence and his most monumental work, initially had no railings. Begun in 1754, the year of Wood's death and completed by his son, John Wood the Younger, this was conceived as a levelled circular piazza, entirely paved with blue lias limestone setts, a reservoir and pump in the middle, and no greenery. However, with complaints that it became a parking ground for coaches and their horses, it was planted with flowers and shrubs, laid to lawn and railed by 1800.[41] The railings here have not been restored as they did not form part of Wood's architectural concept, and there has been long intermittent debate whether the Circus, now dominated by immense old plane trees, should eventually be restored when the trees become moribund.

St James's Square and Catherine Place

St James's Square is the most complete Georgian square in Bath, built 1790-3 by John Palmer, the architectural precedent being Queen Square, elongated here into a north-south rectangle. The railings were restored to their original design through community effort in the 1990s, and the project was researched and overseen by Arnold Roote, conservation officer with Bath and North East Somerset. Early photographs and physical evidence of the extant Bath stone plinths indicated a 'tuning fork' pattern, uprights splaying into double stanchions at the base alternating with single uprights, with plain pyramid-topped finials.[42] Roote 'copied the rustiest and least restored railings of that design and date which I could find in Bath, which were the ones round the closed burial ground of St John the Baptist and St Mary Bathwick, dating to 1808 or thereabouts…[The tuning fork design] was presumably a means of keeping out, or

in, small animals while economising on iron, given its substantial cost in the eighteenth and early-nineteenth century and was - or became - a common railings pattern around Bath's garden squares and green spaces'.[43] Photographic evidence shows the railings in both the Circus and Queen Square to have been this same design, but in Queen Square they were unfortunately restored to a conventional, domestic style.[44] The last big garden square undertaking was Catherine Place by John Wood the Younger, *c*.1777-84, for which a residents' association was formed.[45] Here unusual octagonal castings, evidenced from recesses in the plinths, were sourced from similar examples at nearby Hay Hill.

The Royal Crescent

As Malton's aquatint of Queen Square captures, the elder Wood's town developments in early Georgian Bath were conceived as intensely urban - civilised, manmade and built around the pleasures of the town. Essentially inward looking, they turned their backs on the countryside beyond. By 1767, at the younger Wood's Royal Crescent, the concept of uniting a terrace of town houses with a classical palace frontage continues, but for the first time with the character of a country house. In the foreground is the so-called Crescent Lawn, encircled by wrought iron railings, with – originally – a grand agricultural landscape prospect beyond. The present railings are nineteenth century, supplied by an ironmonger, James Stillman of Corn Street, the originals having been relocated to form a boundary with the newly created Royal Victoria Park to the south. The railings survived the war, reprieved but damaged by bombing and so deteriorated by 2005 that they were put on the Buildings at Risk Register. With uncertainty as to who was responsible for them, the residents then

formed the Crescent Lawn Company and took ownership of the railings and commissioned a major repair programme, funded by a collaboration of the residents' association and individuals, English Heritage, the local authority Parks Department, Bath Preservation Trust, and the Heritage Lottery Fund. Work began with a combination of archival research, on-the-ground survey, paint analysis and archaeology.[46]

The railings were formed of about 90 separate 3m panels, designed for ease of installation, with lap joints to allow expansion and contraction. 60m of railings had bomb damage and most had decayed at the joints. Inappropriate repairs had welded the panels together, forming effectively 315m of continuous railings, and this had resulted in stress fractures and displacement of the stone plinths. The repair was carried out using traditional blacksmithing and casting techniques.[47] The bottom rails, on bun feet, were the most corroded, and were replaced with new material but original metal from these was recycled to retain original fabric. Blacksmiths and masons coordinated 1500 localised repairs, the panels were assembled on reset stone plinths, and the joints and junction of uprights with the top rail were caulked with lead.[48] The project was completed by 2009 (Figures 4 and 5).

Royal Victoria Park

Three splendid sets of gates to the 46 acre (19 ha.) Royal Victoria Park, south and west of the Royal Crescent, removed in the war, were replaced in 2007-8 as part of a restoration project for the whole park which commenced in 2001 and comprised 27 separate projects with a £1.86 million grant from the Heritage Lottery Fund.[49] The

park, registered grade-I, was designed in 1829 by Edward Davis (*c*.1802-52), a pupil of Sir John Soane, just three years after his return from Soane's office in London, and was officially opened by the Duchess of Kent and her daughter Princess Victoria on 28 October 1830. It is one of Britain's earliest public parks, substantially predating John Claudius Loudon's Derby Arboretum (1839) and Joseph Paxton's People's Park (1843-7) at Birkenhead.[50] Edward Davis designed three entrance gates, at least two of which were in place by 1830.[51] Rivers Gate forms the entrance to Royal Avenue from Queen's Parade; rusticated piers and cornices flank the carriageway with pedestrian portals either side, crowned by a significant pair of classical Coade stone lions, added later in 1832-3 and originally bronzed.[52] Queen's Gate closes the other end and Victoria Gate (originally Spry's Gate) announces the carriage drive around the park. The latter is a pair of Soanian, severely trabeated, primitive Greek Revival triumphal arches. All three sets of ironwork gates, with bold Greek Revival detailing, were originally manufactured by E. Tuck & Sons, ironworkers in the city since 1772.[53] Davis's existing design drawings, early photographs, survey and fabric analysis determined the details for the new cast-iron gates (Figures 6 and 7).

Lansdown Crescent

Highlighted in the wartime Railings Exhibition as artistically worthy of retention, the ironwork lighting overthrows at Lansdown Crescent were identified in a report of 30 November 1993 for the Bath Town Scheme as of national importance for the complexity of their construction and the delicacy of the casting work (see Figure 1). Accordingly they were targeted to correct many previous repairs made with inappropriate metals and techniques, and work was completed in 1995.[54] However,

given the rare wartime reprieve, the residents at the time – most of them – as a patriotic gesture donated the railing finials, and in 2012 the Lansdown Crescent Association organised a further project to replace them, some 1400 finials.[55] The World Heritage Enhancement Fund paid for the planning applications and the finial moulds – there were three different designs - and funding sources were in place by February 2016, allowing the project to proceed, helped by a leading article in *The Times*.[56] The finials were pinned and glued in place, rather than using a hot process because of the proximity of glazing and other practical restrictions, a case of selecting the most appropriate conservation repair method for any situation, sometimes traditional and sometimes using modern technology.

The wrought-iron lighting overthrows

The following case study of the reinstatement of overthrows, the ornamental wrought-iron arches supporting light fittings over entranceways, in the Bathwick district of the city, principally Great Pulteney Street, draws together several materials and technologies of the 1790s.[57] Overthrows were commonly removed throughout the city when they became redundant with the introduction of gas lamp standards on the pavements (Figure 8). The city centre introduced gas in 1818 and Bathwick in 1831. Overthrows that did survive tended to deteriorate anyway because of the delicate nature of the wrought ironwork.

The monumental Great Pulteney Street and the adjacent streets, short, unfinished stubs leading nowhere, are a small spinal fragment of a major planned formal estate begun in 1789 that would have been comparable in scale with Edinburgh

New Town. The architect was Thomas Baldwin, a follower of Robert Adam's style.[58] The leases for Great Pulteney Street stipulated owners 'lighting, cleansing, watching, watering and repairing the foot and Carriage Ways'.[59] Indentures for Lansdown Crescent, begun the same year, were yet more prescriptive; owners at their expense had to 'put up a lamp iron before the front door in a line with the iron railing… with a lamp therein …and cause the same to be lighted and so kept at and during proper and reasonable hours every night in and throughout the year'.[60]

The project to restore the overthrows began with application for planning and listed buildings consent in 2008 following initial efforts from the 1980s. Bath and Northeast Somerset Council, the World Heritage Enhancement Fund and Bath Preservation Trust provided initial funding, but each owner had to purchase the individual units at a cost of £3,000. Some 40 have been completed at the time of writing. The residents' association specified that local craftsmanship be used where possible, challenging - but not insurmountable - for glass blowing the lanterns.

The overthrows are fixed to the area railings of each house, fabricated of wrought iron with cast iron and sand-cast lead enrichment, urns, palmettes and patterae. The railings are cast iron, not wrought iron like the city's earlier railings, on the cusp of the transition from craft technology to industrial production.[61] Several Great Pulteney Street overthrows existed but only two – at nos. 55 and 74 - were wholly authentic, the remainder having been repaired or totally replaced in mild steel. The presence of standard fixing locations to all houses and the rapid construction of the estate suggested that overthrows were originally mass-produced to a standard

template with the support arms formed as a cyma curve – a double curve - simply adjusted in length to individual entrance ways, varying in width between 2-3.5m.

As well as the wrought iron overthrow, there was the challenge of designing the lantern that it supports. The consistent size and shape of the central cradle indicated that the lanterns were also mass-produced with a glass bowl that followed the shape of the wrought iron cradle, and contemporary drawings indicated curved conical metal cowls with a ventilator ring, and these all had to be based on using 1790s techniques and technology. The glass bowls were made with an authentic mix using ground flint which gave the glass a slightly grey tinge, and ripples and other imperfections indicated their hand-crafted character (Figure 9). The curved lantern cowl was formed in malleable copper using the ancient technique of metal spinning, where a thin disc is spun on a lathe and pressed into shape over a wooden pattern. Once assembled the copper weathered and patinated naturally. A micro-florescent lamp was fitted in the lantern to give a warm light with a colour temperature of 2700-3000K (kelvin)[62], selected in collaboration with the highways department and the University of Bath (Figure 10).

The authority's consent was somewhat unusual, applying to over 40 houses, yet being initially speculative, agreed following the erection of a single overthrow and lantern, and remaining subsequently active based on the same pattern and contractors being used where possible (Figure 11).

Conclusion

Following - and despite - wartime requisitioning of Britain's architectural gates and railings, demand for iron remained high during and after the war, with further scrap being recovered variously from bombs dropped in the blitz, from shipwrecks, and later from occupied Germany and other sources.[63] Despite this reality, popular myths remain widespread to the present day that the scrap metal was never used but secretly disposed of by the government after the war and official records destroyed. One rumour persists that it was dumped at sea, though in print at least this seems to originate from a letter in London's *Evening Standard* as recently as 1984.[64]

The replacement of Bath's eighteenth-century Georgian ironwork that fed the wartime armaments industry has, however, ironically revived and kept alive the traditional ironworkers' skills in its restoration and repair. It is equally significant that none of the city's projects would have happened without community involvement and drive, and it is fitting that something of the fervent community spirit that left the city bereft of its ironwork in wartime found its echo in a new, gentler community spirit that saw it reinstated.

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Buchanan and Lucy Powell of Bath Record Office and Lizzy Richmond, archivist, University of Bath.

Disclosure statement

No potential conflict of interest was reported by the author.

Captions

Figure 1 Wrought-iron lighting overthrow, Lansdown Crescent, Bath, photograph *c.*1974. Bath Region Building Record, ref. 5706, University of Bath.

Figure 2 Priory Place, Lyncombe Hill, Bath, watercolour, Clifford Ellis, 1943. Given by the Pilgrim Trust, museum number: E.2043-1949. © Victoria and Albert Museum, London.

Figure 3 Thomas Malton the Younger (1748-1804), *Queens Square at Bath* [sic], 1784. Aquatint.

Figure 4 Restored railings, Royal Crescent, Bath. Photo: Brooks Harrison Architects.

Figure 5 Royal Crescent, Bath, caulking the top horizontal to the railings with lead. Photo: Brooks Harrison Architects.

Figure 6 Design for Victoria Gate, Royal Victoria Park, Bath, drawing by Edward Davis, 1829-30. Bath Record Office.

Figure 7 New gilded and painted ironwork gates, Royal Victoria Park, Bath. Photo: Brooks Harrison Architects.

Figure 8 Cast-iron lamp standards having replaced overthrows at Great Pulteney Street, Bath. R. Woodroffe, *Great Pultney Street* [sic], c.1830. Lithograph. Bath Region Building Record, ref. P/BR/258, University of Bath.

Figure 9 Forming the glass bowls for the Great Pulteney Street overthrows. Photo: Brooks Harrison Architects.

Figure 10 The copper lamp and wrought-iron overthrow assembly. Photo: Brooks Harrison Architects.

Figure 11 The completed Great Pulteney Street overthrow. Photo: Brooks Harrison Architects.

Notes

[1] James Melvin and Bryan and Norman Westwood, 'Railings for Scrap', *Architectural Review,* 1 May 1940, v.87 (522), 171-4.
[2] I am grateful to Dr Martin Ansell (University of Bath). Of course other military applications require various metals – aluminium for aeroplanes, brass for shell cases, and so on.
[3] Peter Thorsheim, *Waste into Weapons: Recycling in Britain during the Second World War*, (Cambridge University Press, 2015) is a highly detailed and authoritative account of the subject.
[4] See also *The Bombardment of Bath*, (Bath, 1942) and Michael Forsyth, *Bath: Pevsner Architectural Guides,* (London: Yale University Press, 2003), 44-5.
[5] *Bath Weekly Chronicle and Herald*, 30 September 1939.
[6] Ibid. 20 September 1941.
[7] Ibid. 13 July 1940
[8] Sir Patrick Abercrombie, *Town and Country Planning*, (London: Oxford University Press, 1933, third edition, 1959), 146.
[9] The architect Clough Williams Ellis wrote to *The Times* on April 9, 1938 applauding Field-Marshal Göring's programme in Germany of iron railings requisition because, 'in any case, most of them are

out of date, and not in conformity with modern tastes and ideas', while we are '… as a nation, the great railers-off and railers-in. The Englishman's home is his cage'.
[10] Margot Asquith, Countess of Oxford and Asquith (1864-1945).
[11] Orange Grove, named following the Prince of Orange's visit in 1734, was landscaped with gravel walks and formal planting in the 1730s, with railings introduced by City Architect Charles Edward Davis in the late nineteenth century.
[12] *Bath Weekly Chronicle and Herald*, 24 April 1937.
[13] The Railings Exhibition, first held at the Building Centre, 158 New Bond Street, 10 May-8 June 1940. In August the National Federation of Scrap Iron and Steel Merchants held a further exhibition at Charing Cross Station titled *Bedsteads to Battleships*.
[14] *Bath Weekly Chronicle and Herald*, 7 September 1940.
[15] *Gloucestershire Echo*, 3 July 1941.
[16] *Bath City-wide Character Appraisal, Supplementary Planning Document*, Bath and North East Somerset, 2005, 74; *Combe Down Character Area Appraisal*, Bath and Northeast Somerset Council, 2018, 24.
[17] Ibid., 16 May 1945.
[18] Ibid., 27, 30 July 1940 and 24 Feb. 1942.
[19] The general current pattern is a patchwork of railings, some post-war, some funded through 1990s grant schemes. Dr Jeremy Lake, formerly of Historic England, kindly supplied information.
[20] 'Railings in Peace and War', *Foundry Trade Journal*, 6 February 1941, 87-88.
[21] Celina Fox, 'The Battle of the Railings', *AA Files*, no.29 (Summer 1995), 50-60, is a comprehensive, mainly London-focussed account.
[22] When the London garden squares were opened up *Country Life* reported residents' resentment at their loss of privacy and the wear and tear to grass and flowerbeds, calling for compensation for this too. 'Amenities of London Squares', *Country Life*, 92, iss.2384, 25 September 1942, 615.
[23] The legality of this was raised by a barrister, Harold B. Williams, 'Removal of iron railings', *Journal – Auctioneers' & Estate Agents' Institute,* August 1942, 338-40.
[24] *Bath Weekly Chronicle and Herald*, 8 May 1943.
[25] Ibid., 24 May 1941.
[26] 'Replacement of Railings', *Country Life*, 91, iss.2352, 13 February 1942, 288.
[27] Green, *The Eighteenth Century Architecture of Bath*, Bath, 164-5, singles out No.14 Alfred Street, with unusual, still extant nineteenth-century ironwork: an overthrow lamp holder, two conical snuffers for extinguishing the link boys' torches that lit the way for sedan chairs at night, and a windlass for lowering objects into the basement area.
[28] *Bath Weekly Chronicle and Herald*, 26 September 1942.
[29] Ibid., 19 October 1940.
[30] At Woodland Place, 6 and 9 Cleveland Place West, Cleveland Bridge and, heavier railings, at Lansdown Cemetery.
[31] James Melvin, 'Iron and Steel Railings', *Country Life*, 87, iss.2260, 11 May 1940, 486-7.
[32] The work of the war artists was comprehensively documented by David McLaughlin in *Blitzed: War Artists in Bath* (University of Bath, unpublished MSc thesis, 2005).
[33] Meirion and Susie Harries. *The War Artists: British Official War Art of the Twentieth Century* (London: Michael Joseph in association with the Imperial War Museum and the Tate Gallery, 1985), 159.
[34] Arnold Palmer, ed., *Recording Britain IV*, (Oxford University Press in association with the Pilgrim Trust, 1949), 33-43.
[35] Adam Fergusson, *The Sack of Bath*, (Salisbury: Compton Russell, 1973).
[36] W. Watts' copper-engraving, Queen Square, Bath (R. Bowyer, 1819) illustrates railings to most areas with some balustrading remaining.
[37] Clearly shown on the 1786-87 Bath Turnpike Trust map by Charles Harcourt Masters (1748-1804).
[38] Vivian and Mathieson Architects, drawing no. 812/6, 1977, Bath Record Office, Property Services file: 461/7/Queen Square.
[39] Green, *The Eighteenth Century Architecture of Bath*, (Bath: George Gregory, 1904), 65-6.
[40] *Heritage Analysis: Queen Square, Bath*, McLaughlin Ross LLP, 2011.
[41] John Wood, infatuated with the grandeur of a Rome that he never visited, ludicrously intended the Circus for 'the exhibition of sports' (*A Description of Bath*, 1742-3, 2nd ed. 1749, reprinted 1765 and 1969).
[42] Two forms of tuning fork design are seen in the city, one with angular shoulders involving three forge welds per tuning fork, and others with rounded shoulders requiring just one weld and therefore less fabrication. St James's Square was restored, correctly, with the former.

[43] Arnold Roote, memorandum to the author.
[44] Bath's Holburne Museum railings were also reinstated to their original pattern, 1995-6, Forsyth Chartered Architects. The cost – and availability - of wrought iron for most of these earlier, major restoration projects was usually prohibitive and mild steel (smooth, roughened a little if galvanised) was considered at the time acceptable – and affordable.
[45] *Bath and West Evening Chronicle*, 18 January 1988, 13.
[46] This built on earlier investigation of parch marks in the Crescent Lawn, indicating a large Roman road, with nearby Roman burials, possibly remains of the Fosse Way that linked Exeter (Isca Dumnoniorum) in South West England to Lincoln (Lindum Colonia) in Lincolnshire. Channel 4, *Time Team* (series 10), no.7 episode 99, original air date 16 February 2003.
[47] With Harrison Brookes Architects. I am indebted to Rhys Brookes for technical information.
[48] The less scrupulous – and incorrect – method is of course spot welding.
[49] Harrison Brookes Architects.
[50] Its history is meticulously documented in Frederick Hanham, *Manual for the Park*, (Bath: 1857).
[51] First Report of the Committee of Management, 7 January 1831 (Bath Record Office).
[52] A gift from a Mr Charles Geary, Third Report of the Committee of Management, 19 April 1833 (Bath Record Office).
[53] *Bath Weekly Chronicle and Herald*, 5 July 1947.
[54] The Bath Town Scheme was an arrangement between English Heritage and Bath City Council for making joint grants of 40% towards the cost of repairing listed buildings within the Bath Conservation Area. Architect: Anthony Pearson; contractor: Dorothea Restorations. Bath Record Office, Grant Files, Lansdown Crescent.
[55] Instigated by resident Rebecca Derry-Evans; Harrison Brookes Architects; contractor, Chapel Forge. Fund raising, mainly by the residents, took time, and in the end one generous resident put in a sizeable amount. Figure 1 illustrates two houses that retained their finials, with only one or two missing.
[56] 26 March 2016.
[57] Harrison Brookes Architects.
[58] Pulteney Bridge, spanning the River Avon and connecting the city to Bathwick, is Robert Adam's only completed work in the city.
[59] 'Miss Pulteney to Mr. William Phillips'. Deeds of a Great Pulteney Street house, 29 September 1791.
[60] Indenture of Release (relating to 19 Lansdown Place, now 19 Lansdown Crescent), 2 May 1788 between John Lowder, Charles Spackman and Charles Philpott of the one part and Thomas Bowden and John Fischer of the other part. The owner, incidentally, had to pay a residents' charge for 'scavengers and watchmen' to cleanse and watch the outside of their properties.
[61] Referring to eighteenth-century railings in general, Arnold Roote, ibid., notes, 'experience with, for example, the gates at Elmore Court [Elmore, Gloucestershire] suggests that more cast was used in non-decorative contexts than we might now imagine.'
[62] The Kelvin scale is an absolute thermodynamic temperature scale named after William Thomson, 1st Baron Kelvin, OM, GCVO, PC, FRS, FRSE, a Scots-Irish mathematical physicist and engineer.
[63] Thorsheim, 123, 232ff and elsewhere.
[64] The journalist Christopher Long wrote a letter to the *Evening Standard*, 24 May 1984, citing recollections in 1978 of dockers who had worked on 'lighters' during the war: '…The tragedy is that so many of London's railings were pulled down in order to support Britain's war effort, bearing in mind that they never became the guns and tanks they were intended for.'